

ABSTRACT OF THE DISCLOSURE

Light rays of a plurality of wavelengths which are modulated in intensity with a plurality of different frequencies are irradiated on a plurality of irradiation positions on the surface of a living body, and time-variable changes in living body transmitting light intensity levels corresponding to the respective wavelengths and the respective irradiation positions are measured at different positions on the surface of the living body. After completion of the measurement or during the measurement, changes in concentration values of absorbers in the living body are determined from the living body transmitting light intensity levels of the plurality of wavelengths detected at the respective detection points and a measuring point is set on a perpendicular extending through an intermediate point between the incident point and each detection point so as to image a function of the living body. In living body optical measurement system and method, the measuring time is shortened by estimating fluctuation attributable to the living body, the presence or absence of a change in measured signal can be decided easily by displaying an estimation signal and a measured signal at a time, and a local change in hemodynamic movement can be measured by detecting light rays transmitting through the interior of the living body by means of two means for light detection disposed at different two sites (equidistant from the light

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incident point) on a subject and by separating only the local change in hemodynamic movement from an overall change in hemodynamic movement in the living body in accordance with a logarithmic difference between the two detection signals.

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